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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,710	08/03/2001	Dunling Li	TI-33330 (1.109US)	5075
23494	7590	06/08/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			OPSASNICK, MICHAEL N	
			ART UNIT	PAPER NUMBER
			2655	
DATE MAILED: 06/08/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/920,710

Applicant(s)

LI, DUNLING

Examiner

Michael N. Opsasnick

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-13 is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/11/2002, 2/6/2002
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

49/0228/6/02

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Allowable Subject Matter

2. Claims 10-13 are allowable over the prior art of record.
3. Claims 8,9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
4. The following is a statement of reasons for the indication of allowable subject matter:
As per independent claim 10, the recited claim limitations pertaining to calculating a noise identification threshold and a voice identification threshold, wherein the values of the

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differing types of energy calculations used to determine these thresholds are the values that are within a range of initial calculated average value, is not explicitly taught by the prior art of record.

As per dependent claim 8, the recited limitations pertaining to counting the number of consecutive times the G.729B VAD detects voice frames, assigning a count to a counter variable base on the voice frames, and producing a specific event when the second counter reaches a predetermined variable, all in conjunction with a first counter, is not explicitly taught by the prior art of record.

A typical prior art, as noted below in Benyassine et al ("ITU-T Recommendation G.729 Annex B: A Silence Compression Scheme for Use with G.729 Optimized for V.70 Digital Simultaneous Voice and Data Applications", IEEE Communications Magazine, September 1997, pp 64-73), teaches the concept of using multiple energy measurement values (pp 66, bottom of col. 1 to the end of col. 2), however, Benyassine et al does not explicitly disclose the calculation as claimed in claim 10 as noted above. Benyassine also teaches tracking the number of instances of noise/silent periods in the G.729B VAD (pp 67, col. 1 lines 44-60; and pp 68, col. 1, bottom – DTX update counter); however, Benyassine et al does not explicitly disclose a second counter tracking the voice frames in a G.729B VAD, in conjunction with a first counter. Furthermore, it would not have been obvious to one of ordinary skill in the art of VAD to modify the teachings of the prior art of record to obtain the recited claim limitations of claims 8 and 10 as noted above.

Claims 9,11-13 are allowable over the prior art of record because these claims depend from claim 8,10 respectively, which have been determined to be allowable over the prior art of record.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Benyassine et al (“ITU-T Recommendation G.729 Annex B: A Silence Compression Scheme for Use with G.729 Optimized for V.70 Digital Simultaneous Voice and Data Applications”, IEEE Communications Magazine, September 1997, pp 64-73).

As per claim 1, Benyassine et al (“ITU-T...”) teaches:

“A method of converging an ITU Recommendation G.729 Annex B....device, comprising the steps of:” as VAD according to G.729, in applicant to G.729B (pp 65, 2nd column, lines 42-46; also note applicant’s fig.1 to fig. 1 of Benyassine et al (“ITU-T...”));

“determining a first set of running average background noise characteristics in accordance with Recommendation G.729B” as tracking averages in the G.729B system (pp 67, col. 1 lines 44-46);

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“determining a second set of running average background noise characteristics; and” as developing a second set of parameters based on a first order autoregressive integration (pp 67, col. 1 lines 48-54);

“substituting said second set of running average background noise characteristics for said first set when a specific event occurs” as substituting the second batch of noise characteristics when the VAD detects silence or background noise (pp 67, col. 1 lines 55-60).

As per claims 2,4, Benyassine et al (“ITU-T...”) teaches:

“wherein said specific event is an increasing divergence between said first and second sets of running average background noise characteristics with time” as the divergence between the past and current noise levels – as in the “abrupt increase in noise level” (pp 67, col. 1, lines 55-60).

As per claim 3, Benyassine et al (“ITU-T...”) teaches:

“A method of converging an ITU Recommendation G.729 Annex B....device, comprising the steps of:” as VAD according to G.729, in applicant to G.729B (pp 65, 2nd column, lines 42-46; also note applicant’s fig.1 to fig. 1 of Benyassine et al (“ITU-T...”));

“determining a noise identification threshold value; determining a voice identification threshold value” as calculating an active voice threshold and an inactive threshold decision (pp 67, col. 1 lines 20-42; and pp 71, table 4).

“comparing an energy measure of a signal to a minimum threshold value, said noise identification threshold value, and said voice identification threshold value” as measuring the frame energy (pp 67, col. 1 lines 27-29) and comparing that energy to the three thresholds (pp 67, col. 1 lines 26-42).

“determining a first set of running average background noise characteristics in accordance with Recommendation G.729B” as tracking averages in the G.729B system (pp 67, col. 1 lines 44-46);

“determining a second set of running average background noise characteristics” as developing a second set of parameters based on a first order autoregressive integration (pp 67, col. 1 lines 48-54); and

“substituting said second set of running average background noise characteristics for said first set when a specific event occurs” as substituting the second batch of noise characteristics when the VAD detects silence or background noise (pp 67, col. 1 lines 55-60).

As per claim 5, Benyassine et al (“ITU-T...”) teaches:

“said second set of running average background noise characteristics is determined only when said energy measure of a signal equals or exceeds said minimum threshold value and is less than or equal to said noise identification threshold value.” As decision is based on silence or background noise (page 67, col. 1 lines 45-55).

As per claim 6, Benyassine et al (“ITU-T...”) teaches:

“A method of converging an ITU Recommendation G.729 Annex B....device, comprising the steps of:” as VAD according to G.729, in applicant to G.729B (pp 65, 2nd column, lines 42-46; also note applicant’s fig.1 to fig. 1 of Benyassine et al (“ITU-T...”)));

“determining a noise identification threshold value; determining a voice identification threshold value” as calculating an active voice threshold and an inactive threshold decision (pp 67, col. 1 lines 20-42; and pp 71, table 4).

“comparing a number of energy measure of a signal to a minimum threshold value, said noise identification threshold value, and said voice identification threshold value” as measuring the frame energy (pp 67, col. 1 lines 27-29) and comparing that energy to the three thresholds (pp 67, col. 1 lines 26-42); wherein the frame energy can be calculated using a number (and plurality) of energy measures (pp 66, col. 2, LSF’s, full band, low band, zero crossing, long term minimum energy, etc.).

“determining a first set of running average background noise characteristics in accordance with Recommendation G.729B” as tracking averages in the G.729B system (pp 67, col. 1 lines 44-46);

“determining a second set of running average background noise characteristics; and” as developing a second set of parameters based on a first order autoregressive integration (pp 67, col. 1 lines 48-54);

“counting the number of consecutive time the G.729 B update condition are not met and assigning the count to a first counter variable” as counting the spacing between updating the SID frames (pp 68, col. 2 lines 1-9 – the count pertains to how soon the

previous updated SID frame was sent, i.e., the system counts how many consecutive times the noise characteristics changed dramatically).

“substituting said second set of running average background noise characteristics for said first set when a specific event occurs” as substituting the second batch of noise characteristics when the VAD detects silence or background noise (pp 67, col. 1 lines 55-60).

As per claim 7, Benyassine et al (“ITU-T...”) teaches:

“said specific event occurs when a predetermined value of said first counter variable is reached” as when the count reaches 2 frames, an updated SID frame is allowed to be sent (pp 68, col. 2 lines 8-10).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cason (6249757) teaches a resetable counter to track silent frames (Fig. 1)

Jarvinen et al (5960389) teaches tracking VAD flag (fig. 5) and counts comfort noise frames (col. 21) based upon the status of the voice flag (col. 21)

Romesburg et al (6163608) teaches comfort noise and SID generation.

Vahatalo et al (5839101) teaches counting and tracking of noise frames.

Sato et al (6044342) teaches the tracking of speech spurts to update the average noise.

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Kim et al (6687668) teaches dual VAD flags in a G.723.1 voice processor.

8. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872 9314,

(for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Opsasnick, telephone number (571)272-7623, who is available Tuesday-Thursday, 9am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Mr. David Ometz, can be reached at (571)272-7593. The facsimile phone number for this group is (571)272-7629.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (571) 272-2600, the 2600 Customer Service telephone number is (571)272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mno

5/25/05



Michael N. Opsasnick
Examiner
Art Unit 2655